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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,898	03/04/2004	Kiyoe Ochiai	118936	6968
25944	7590	05/05/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			HIRUY, ELIAS	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,898

Applicant(s)

OCHIAI ET AL.

Examiner

Elias B. Hiruy

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 18-25 and 28-33 is/are rejected.
- 7) ☒ Claim(s) 16, 17, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Information Disclosure Statement

2. An initialed and dated copy of Applicant's IDS form 1449 is attached to the instant Office action.

Claim Rejections - 35 USC § 112

- The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 21-23 and 31-33 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The applicant teaches how the power of the motor generator and the motor could be calculated and the sum of the two values could be determined to be greater than or equal to zero. The teaching of the application suggests that a power generated by a

Art Unit: 2837

motor could be zero. It is well known that the only time a power generated by a motor could achieve a value of zero is when the motor/generator is turned off. Thus, it is found by the examiner that the teaching is not enabling to one having ordinary skill in the art.

Claim Rejections - 35 USC § 102

- The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 3-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Moriya et al (Pub No. US 2002/0105300 A1).

Regarding claim 1, Moriya et al discloses a power output apparatus that comprises a first inverter (figure 1, 30), second inverter (figure 1, 32), and a 2Y motor (figure 1, 22) having a first three-phase motor coil (figure 1, 24) and a second three-phase motor coil (figure 1, 26) functioning as stators (abstract lines 3-7). Energization of said first and second three-phase motor coils being controlled respectively by said first and second inverters (page 3 paragraph 51 lines 6-9). Further, Moriya et al also discloses a power supply (page 3 paragraph 51 lines 14-15) (figure 1, 40) connected between a first neutral point of said first three-phase motor coil and a second neutral point of said second three-phase motor coil. A capacitor element (figure 1, 38) is provided on an input side of said first and second inverters. The control unit (figure 1,

50) of Moriya et al invention controls said first or second inverter to allow charging of said capacitor element to be performed (page 3 paragraph 54 lines 21-24).

Regarding claim 3, Moriya et al teaches how the power output apparatus charging operation refers to an operation of increasing a power-supply voltage that is output from said power supply to allow an output voltage (V_c) of said capacitor element to be at a desired value (page 4 paragraph 57 lines 1-6 and page 7 paragraph 87 lines 1-3).

Regarding claim 4 and 6, Moriya et al teaches how the said first inverter (composed of T11-T16 as shown in figure 1) includes three arms provided correspondingly to said first three-phase motor coil and the said second inverter (composed of T21-T26 as shown in figure 1) includes three arms provided correspondingly to said second three-phase motor coil. In like manner of claim 4, the said charging operation is performed by using all phase coils of said first three-phase motor coil and said three arms of said first inverter or using all phase coils of said second three-phase motor coil and said three arms of said second inverter (page 4 paragraph 57 lines 29-39). Regarding claim 6, the said charging operation is performed by using a first motor coil selected from phase coils (such as coil 24 u-phase) of said first three-phase motor coil and a first arm corresponding to said first motor coil and selected from said three arms (such as inverter 30 arm T12) of said first inverter, or using a second motor coil selected from phase coils (such as coil 24 u-phase) of said second three-phase motor coil and a second arm corresponding to said second motor

Art Unit: 2837

coil and selected from said three arms (such as inverter 32 arm T21) of said second inverter (page 3 paragraph 55 lines 9-17).

Regarding claim 5 and 7, the control unit 50 of Moriya et controls said three arms of said inverter or said second inverter to allow said charging operation to be performed. Further, the "electronic control unit 50" is responsible "for controlling the entire apparatus" (page 3 paragraph 51 lines 16-17).

Claim Rejections - 35 USC § 103

- The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya et al (Pub No. US 2002/0105300 A1), as applied to claim 1 above, in view of Ono et al U.S. Patent No. (6,529,487).

Regarding claim 2, it is shown above in paragraph 4 how Moriya et al meet the limitation of claim 1. Further, Moriya et al also teaches how the control unit controls said first and second inverters to allow a voltage step-up operation for increasing a power-supply voltage which is output from said power supply as well as a drive operation for driving said 2Y motor to be performed after said charge operation is completed.

However, Moriya et al fails to teach, in the manner taught in claim 2, how the 2Y motor starts an internal combustion engine.

On the other hand, Ono et al shows an electric motor generating electric power from a rotational force from an internal combustion engine and starts said internal combustion engine (7 and 15, figure 3) (column 5 lines 25-37, column 6 lines 20-26 column, and column 15 lines 8-11).

Thus, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Moriya et al 2Y motor into Ono et al invention since the method will eliminate additional hardware need to generate electric power and enables one to efficiently use both power sources.

The aforementioned invention of claim 2 that showed a combination of primary reference Moriya et al and secondary reference Ono et al as taught above disclosed a 2Y motor that generates electric power from a rotational force of an internal combustion engine.

Art Unit: 2837

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya et al (Pub No. US 2002/0105300 A1), as applied to claim 1 above, in view of Rippel et al (U.S. 5,099,186) in view of Kumar et al U.S. Patent No. (U.S. 6,023,137).

It is shown above in paragraph 4 how Moriya et al meet the limitation of claim 1. However, Moriya et al fails to show a first switch provided between said first neutral point and said power supply, a second switch provided between said first neutral point and said power supply and in parallel with said first switch, and a resistor element connected between said first neutral point and said first switch. Further, the control unit lacks the functions as discussed in this claim.

Rippel et al, on the other hand, teaches how an input/output port (30, figure 1) can be connected between the two neutral points of the 2Y motors. Further, Rippel et al teaches a method where by the power supply could be connected or disconnected by controlling the relay by the controller (column 4, lines 5-20).

Thus, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Rippel et al invention into Moriya et al since the method will enable to effectively control the amount of charge derived or added into the power apparatus.

The aforementioned invention, however, lacks to show the output/input port contains a first switch provided between said first neutral points and said power supply, a second switch provided between said first neutral point and said power supply and in parallel with said first switch, and a resistor element connected between said first neutral point and said first switch.

Kumar et al, nevertheless, shows a first switch (k2, figure 4) and a second switch (k3b and k3a, figure 4) provided between a power supply and an inverter set. Further Kumar et al shows a resistor element connected between the first switch and inverter.

Thus, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Kumar et al invention into the aforementioned invention since the setup will give a better control of each individual switch.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya et al (Pub No. US 2002/0105300 A1), as applied to claim 1 above, in view of Nitta et al (U.S. 6,203,468).

It is shown above in paragraph 4 how Moriya et al meet the limitation of claim 1. However, Moriya et al fails to show a control unit that displays on a display unit an indication that preparations for driving said power output apparatus are completed.

On the other hand, Nitta et al shows a control unit 20 connected to a display 27 where the display shows the charging condition (column 6, lines 12-15).

Thus, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate display 27 into Moriya invention the motivation being that the display unit will help monitor several functions of the vehicle and improves operator understanding of the present condition of the vehicle.

8. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rippel et al (U.S. 5,099,186) in view of Ono et al (U.S. 6,529,487), as applied to claim 10 above, further in view of Koide et al (U.S. 5,936,312).

It is shown above in paragraph 5 how Moriya et al and Ono et al meet the limitation of claim 10.

Regarding claim 11, the combination of Moriya et al and Ono et al failed to show how the 2Y motor, an electric motor different from said 2Y motor, and said internal combustion engine are connected to the planetary gear.

Nevertheless, Koide et al shows how a first electric motor, a second electric motor, and an engine are connected to a planetary gear (column 30, lines 5-17).

Thus, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the planetary gear used in Koide et al into the combination of the two patents. The motivation being that using a planetary gear in hybrid systems is known to provide a distribution mechanism that enables the effective use of all power sources on board.

Regarding claim 12, the aforementioned invention of claim 11 has a 2Y motor and an electric motor that is different from the 2Y motor, which was described above while discussing the limitation of claim 11. Although all of the inventions show a control unit, Ono et al control unit possesses the functions of the control unit of this, claim 12. The control unit is used to operate the first electric motor (15, figure 3), the second electric motor (8, 12, and 13, figure 3) and the Engine (7, figure 3) in the same manner as described by claim 12 of this application.

The aforementioned invention of claim 11, however, fails to show an inverter that can be used to control the second electric motor, which is different from the 2Y electric motor.

However, Koide et al discloses an apparatus that has a control unit (90, figure 1) a first electric motor (30, figure 1), a second electric motor (40, figure 1), and an engine (50, figure 1). The second electric motor of Koide et al discloses an inverter (92, figure 1) that is used by the control unit to control the electric motor. Further, the control unit of Koide et al also shows similar functions as claimed in claim 12.

Accordingly, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Koide et al inverter into the aforementioned invention of Rippel et al and Ono et al since the method of using inverters to control an electric motor is well known in the art.

Regarding claim 13, it is shown in the previous paragraph how the limitations of claim 12 are met by the combination of the three patents. The limitation of claim 13 are met by Rippel et al as it teaches how the control unit connects/disconnects the power supply from the said first and second neutral points (column 3 lines 65-68 and column 4 lines 1-20).

9. Claims 14-15, 18-19, 24-25 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya et al (Pub No. US 2002/0105300 A1) in view of Kumar et al U.S. Patent No. (6,023,137).

Regarding claim 14 and 24, Moriya et al disclosure shows an apparatus that has a 2Y motor (22, figure 10). However, Moriya et al fails to show how the 2Y motor is coupled to an internal combustion engine and an electric motor coupled to drive wheels of the hybrid vehicle.

On the other hand, Kumar et al shows a motor that is coupled to an internal combustion engine and electric traction motors that are driving wheels of the hybrid vehicle (column 2 lines 52-67, and column 3 1-20).

Accordingly, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the internal combustion engine into Moriya et al. The motivation being that the method will eliminate additional hardware need to generate electric power and enables one to efficiently use both power sources.

Regarding claim 24, Moriya et al shows a microprocessor that contains a computer recordable recording medium (Rom/Ram) (54 and 56, figure 10) (page 3 paragraph 54 lines 1-7) used to store programs that are responsible to operate the power output apparatus.

Regarding claim 15 and 25, Moriya et al shows how the power supply voltage outputted from the power supply is applied to the capacitor via the inverter. Further, it also teaches how the supply voltage is increased to charge said capacitor element.

Regarding claim 18 and 28, Moriya et al discloses charging operation performed by using all three arms of said first inverter or using all three arms of said second inverter (page 4 paragraph 57 lines 29-39).

Regarding claim 19 and 29, by using a first motor coil selected from phase coils (such as coil 24 u-phase) of said first three-phase motor coil and a first arm corresponding to said first motor coil and selected from said three arms (such as inverter 30 arm T12) of said first inverter, or using a second motor coil selected from phase coils (such as coil 24 u-phase) of said second three-phase motor coil and a

Art Unit: 2837

second arm corresponding to said second motor coil and selected from said three arms (such as inverter 32 arm T21) of said second inverter the power –supply voltage is increased (page 3 paragraph 55 lines 9-17).

10. Claims 20 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya et al (Pub No. US 2002/0105300 A1) in view of Kumar et al U.S. Patent No. (6,023,137) further in view of Nitta et al (U.S. 6,203,468).

It is shown above in paragraph 9 how the combination of Moriya et al and Kumar et al invention meets the limitation of claim 14 and 24. However, Moriya et al fails to show a control unit that displays on a display unit an indication that preparations for driving said power output apparatus are completed.

On the other hand, Nitta et al shows a control unit 20 connected to a display 27 where the display shows the charging condition (column 6, lines 12-15).

Thus, It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate display 27 into Moriya invention; the motivation being that the display unit will help monitor several functions of the vehicle and improves operator understanding of the present condition of the vehicle.

Allowable Subject Matter

11. Claims 16-17 and 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

During the prosecution of the application, the examiner has noted that most of the subject matters discussed in this application has been taught by the prior arts. For example, Rippel et al teaches most of the fundamental functionalities and apparatus that are presented as new invention. The prior arts that were found best as evidence of knowledge of the subject matter were applied to show that the teaching of this application is old and well known.

Remarks

13. No claim is allowed.

Correspondence

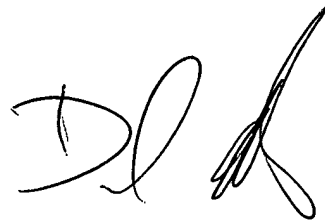
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias B. Hiruy whose telephone number is 571-272-6105. The examiner can normally be reached on 7AM- 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

Art Unit: 2837

applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EH
04/26/2005

A handwritten signature in black ink, appearing to read 'DM', with a long, sweeping horizontal stroke extending to the right.

DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800